

SLOVENSKI STANDARD

SIST EN 824:2013

01-julij-2013

Nadomešča:
SIST EN 824:1997

Toplotno izolacijski proizvodi za uporabo v gradbeništvu - Ugotavljanje pravokotnosti

Thermal insulating products for building applications - Determination of squareness

Wärmedämmstoffe für das Bauwesen - Bestimmung der Rechtwinkligkeit

Produits isolants thermiques destinés aux applications du bâtiment - Détermination de l'équerrage

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Ta slovenski standard je istoveten z: EN 824:2013

ICS:

91.100.60

Materiali za toplotno in
zvočno izolacijo

Thermal and sound insulating
materials

SIST EN 824:2013

en,fr,de

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 824

March 2013

ICS 91.100.60

Supersedes EN 824:1994

English Version

**Thermal insulating products for building applications -
Determination of squareness**

Produits isolants thermiques destinés aux applications du
bâtiment - Détermination de l'équerrage

Wärmedämmstoffe für das Bauwesen - Bestimmung der
Rechtwinkligkeit

This European Standard was approved by CEN on 15 December 2012.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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Foreword

This document (EN 824:2013) has been prepared by Technical Committee CEN/TC 88 “Thermal insulating materials and products”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2013, and conflicting national standards shall be withdrawn at the latest by September 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 824:1994.

The revision of this standard contains no major changes, only minor corrections and clarifications of an editorial nature.

This European Standard is one of a series of standards with specify test methods for determining dimensions and properties of thermal insulating materials and products. It supports a series of products standards for thermal insulating materials and products which derive from the Council Directive of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products (Directive 89/106/EEC) through the consideration of the essential requirements.

This European Standard has been drafted for applications in buildings but it may also be used in other areas where it is relevant.

This European test standard is one of the following group of inter-related standards on test methods for determining dimensions and properties of thermal insulation materials and products, all of which fall within the scope of CEN/TC 88:

- EN 822, *Thermal insulating products for building applications — Determination of length and width*
- EN 823, *Thermal insulating products for building applications — Determination of thickness*
- EN 824, *Thermal insulating products for building applications — Determination of squareness*
- EN 825, *Thermal insulating products for building applications — Determination of flatness*
- EN 826, *Thermal insulating products for building applications — Determination of compression behaviour*
- EN 1602, *Thermal insulating products for building applications — Determination of the apparent density*
- EN 1603, *Thermal insulating products for building applications — Determination of dimensional stability under constant normal laboratory conditions (23 °C/50 % relative humidity)*
- EN 1604, *Thermal insulating products for building applications — Determination of dimensional stability under specified temperature and humidity conditions*
- EN 1605, *Thermal insulating products for building applications — Determination of deformation under specified compressive load and temperature conditions*
- EN 1606, *Thermal insulating products for building applications — Determination of compressive creep*

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- EN 1607, *Thermal insulating products for building applications — Determination of tensile strength perpendicular to faces*
- EN 1608, *Thermal insulating products for building applications — Determination of tensile strength parallel to faces*
- EN 1609, *Thermal insulating products for building applications — Determination of short-term water absorption by partial immersion*
- EN 12085, *Thermal insulating products for building applications — Determination of linear dimensions of test specimens*
- EN 12086, *Thermal insulating products for building applications — Determination of water vapour transmission properties*
- EN 12087, *Thermal insulating products for building applications — Determination of long-term water absorption by immersion*
- EN 12088, *Thermal insulating products for building applications — Determination of long-term water absorption by diffusion*
- EN 12089, *Thermal insulating products for building applications — Determination of bending behaviour*
- EN 12090, *Thermal insulating products for building applications — Determination of shear behaviour*
- EN 12091, *Thermal insulating products for building applications — Determination of freeze-thaw resistance*
- EN 12429, *Thermal insulating products for building applications — Conditioning to moisture equilibrium under specified temperature and humidity conditions*
- EN 12430, *Thermal insulating products for building applications — Determination of behaviour under point load*
- EN 12431, *Thermal insulating products for building applications — Determination of thickness for floating floor insulating products*
- EN 13793, *Thermal insulating products for building applications — Determination of behaviour under cyclic loading*
- EN 13820, *Thermal insulating materials for building applications — Determination of organic content*

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies the equipment and procedure for determining the deviation from squareness for length, width and/or thickness of full-size products. It is applicable to thermal insulating products. The method is normally applicable to products with straight edges. For products of other shape, e.g. profiled edges, the method can be adapted accordingly.

2 Normative references

This European Standard contains no normative references.

3 Terms and definitions

For the purposes of this document, the following term and definition applies.

3.1

deviation from squareness

distance from one limb of a perfect square to the edge of the product at a given distance from a corner

Note 1 to entry: See Figures 1 to 3.

4 Principle

Apply a metal square to the product edges and measure the deviation between one limb of the metal square and the products edge (see Figure 1).

5 Apparatus

5.1 Flat surface.

[SIST EN 824:2013](https://standards.iteh.ai/catalog/standards/sist/5158efb1-b624-4a64-86d2-)

5.2 Metal rule or metal tape, graduated in millimetres and permitting reading to 0,5 mm;

5.3 Metal square, with limbs at least 500 mm long with a deviation from squareness of not more than $\pm 0,1$ mm when measured at 500 mm from the corner.

Any test equipment which provides the same result with at least the same accuracy may be used.

6 Test specimens

6.1 Dimensions of test specimens

The test specimens shall be the full-size product.

6.2 Number of test specimens

The number of test specimens shall be as specified in the relevant product standard.

In the absence of a product standard, the number of test specimens may be agreed between parties.

6.3 Conditioning of test specimens

The test specimens should be stored for a least 6 h at $(23 \pm 5) ^\circ\text{C}$. In case of dispute they shall be stored at $(23 \pm 2) ^\circ\text{C}$ and $(50 \pm 5) \%$ relative humidity for the time specified in the relevant product standard.

7 Procedure

7.1 Determination of the squareness of the length and width edges

7.1.1 Test conditions

The test should be carried out at $(23 \pm 5) ^\circ\text{C}$. In case of dispute it shall be carried out at $(23 \pm 2) ^\circ\text{C}$ and $(50 \pm 5) \%$ relative humidity.

7.1.2 Test procedure

Lay the test specimen on a flat surface and measure the deviation from squareness of length and width as follows:

- a) place the metal square along one of the sides of the test specimen with the right angle of the square aligned against the adjoining edge as in Figure 2;
- b) measure the distance a_b between the edge of the test specimen and the edge of the metal square, at a distance c from the corner, to the nearest 0,5 mm, where:
 - 1) for the test specimens with a side of less than 500 mm, c is the maximum width or length of the specimen;
 - 2) for the test specimen with a side equal to or greater than 500 mm, c is the length of the inner side of the square (see Figure 2);
- c) repeat for all corner of the test specimen having angles smaller than or equal to 90° ;
- d) if there is any significant deviation from linearity of the edges in the length or the width, this shall be reported as the maximum deviation from linearity, a_{max} , expressed in millimetres (see Figure 4).

7.2 Determination of the squareness of the thickness edge

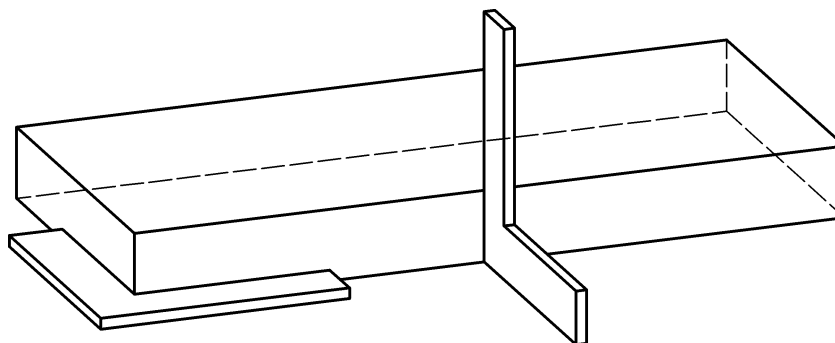
7.2.1 Test conditions

The test should be carried out at $(23 \pm 5) ^\circ\text{C}$. In case of dispute it shall be carried out at $(23 \pm 2) ^\circ\text{C}$ and $(50 \pm 5) \%$ relative humidity.

7.2.2 Test procedure

Lay the test specimen on a flat surface and measure the deviation from squareness of the thickness as follows:

- a) place the metal square on the flat surface against one edge of the test specimen as in Figure 3;
- b) measure the distance a_d to the nearest 0,5 mm between the edge of the test specimen and the edge of the square at the point of the greatest deviation along the side;
- c) repeat for all sides;
- d) turn the test specimen over and repeat items a) to c);
- e) report the largest figure as the deviation from squareness of the thickness edge.



See Figure 2.

See Figure 3.

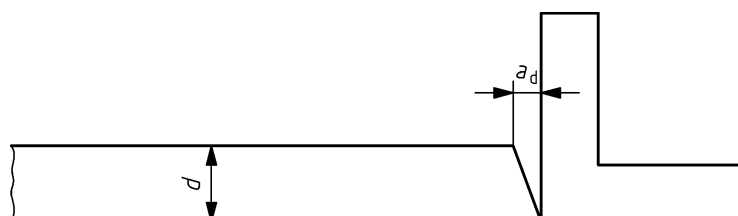
Figure 1 — Example of the measurement of length and width edge squareness and of thickness edge squareness



Key

- b length or width of the product depending on the corner which is controlled
- a_b deviation from squareness of length or width
- c length of inner side of the square

Figure 2 — Example of the measurement of length and width edge squareness



Key

- d thickness of the product
- a_d deviation from squareness

Figure 3 — Example of the measurement of thickness edge squareness